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HAMILTON, BROOK, SMITH & REYNOLDS, P.C.
530 VIRGINIA ROAD
P.O. BOX 9133
CONCORD, MA 01742-9133

EXAMINER

CHEVALIER, ALICIA ANN

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 05/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/488,129

Applicant(s)

MULLEN ET AL.

Examiner

Alicia Chevalier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 11-15, 18, 22-27 and 29-49 is/are pending in the application.

4a) Of the above claim(s) 34-43 is/are withdrawn from consideration.

- 5) ☐ Claim(s) _____ is/are allowed.

- 6) ☒ Claim(s) 1-6, 11-15, 18, 22-27, 29-33 and 44-49 is/are rejected.

- 7) ☐ Claim(s) _____ is/are objected to.

- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

RESPONSE TO AMENDMENT

WITHDRAWN REJECTIONS

1. The 35 U.S.C. §102 rejection as anticipated by Jones (5,182,663) of record in paper #16, page 4, paragraph #9 has been withdrawn due to Applicant's cancellation of claims 50-52 in paper #18.

REJECTIONS REPEATED

2. The 35 U.S.C. §102 rejection of claims 1, 2, 5, 11-13, 18 and 24-26 as anticipated by Nilsen et al. (5,657,162) is repeated for reasons previously of record in paper #16, page 3, paragraph #7.

Nilsen discloses a retroreflective article comprising a transparent top, retroreflecting prisms, a transparent adhesive, a transparent film, retroreflecting prisms, an opaque white adhesive, and a transparent substrate (figure 5). Both layers of retroreflecting prisms are at least partially cover with an optical metal coating such as silver or aluminum (col. 4, lines 35-40). The adhesive layers may either be transparent or colored (col. 2, lines 51-56). The prisms have cube corner formation (col. 2, lines 60-61) and comprise various thermoplastic and thermoset polymers (col. 3, lines 7-19).

The term "breakable" is considered to be equivalent to "capable of." It has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform.

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3. The 35 U.S.C. §102 rejection of claims 44, 46 and 48 as anticipated by Fellows et al. (6,050,691) is repeated for reasons previously of record in paper #16, pages 3-4, paragraph #8.

Fellows discloses a retroreflective cube-corner article having randomly oriented cube-corner elements (chips) dispersed on a substrate (figure 3). The cube-corner elements may be of different sizes, different geometries, and different central axis heights (col. 6, lines 30-49). The cube-corner optical faces typically have a reflective coating thereon, such as silver or aluminum. The faces may also comprise transparent colorants to impart color to the inventive sheeting (col. 7, lines 24-33).

4. The 35 U.S.C. §102/103 rejection of claims 3 and 4 as anticipated by or over Nilsen et al. (5,657,162) is repeated for reasons previously of record in paper #16, page 4, paragraph #10.

Although Nilsen does not explicitly teach the limitations the index of refraction is in the range of between about 1.1 and 1.3, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of similar materials (i.e. silver or aluminum) and in the similar production steps (i.e. vacuum deposition) used to produce the retroreflective article. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594. In the alternative, the claimed index of refraction would obviously have been provided by the process disclosed by Nilsen. Note *In re Best*, 195 USPQ 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC 103 in addition to the rejection made above under 35 USC 102.

5. The 35 U.S.C. §103 rejection of claims 1-5, 11, 12, 14, 15, 18, 22-27, 30-33, 44, 45 and 47 over Stump et al. (5,835,271) in view of Nilsen et al. (5,657,162) is repeated for reasons previously of record in paper #16, pages 5-7, paragraph #11.

Stump discloses an encased retroreflective elements which can be divided into a plurality of retroreflector pieces, which are then mixed with a clear thermoplastic resin and extruded to form an extruded retroreflective member (col. 2, lines 54-58). The retroreflector comprises a first transparent film, a first layer of transparent microspheres, a reflecting layer, an adhesive, a second reflecting layer, a second layer of transparent microspheres, and a second transparent film (col. 4, lines 34-51 and figure 1).

The retroreflective microspheres layer can also be of the cube-corner sheet type (col. 5, lines 16-19) of the kind disclosed in McGrath pat. no. 4,025,159 which is incorporated by reference, which further incorporated by reference Weber pat. no. 3,140,340. McGrath discloses a cube corner retroreflective sheet having patterns of no open-faced cube-corner surfaces (McGrath '159 figures 7 and 8). Weber discloses that the cube corner reflective sheeting can be made of a variety of thermoplastic and thermoset polymers (Weber '340 col. 4, lines 55-61).

The reflecting layer maybe either aluminum or silver (col. 5, lines 47-49).

The retroreflectors are broken into a plurality of pieces and randomly dispersed into a thermoplastic matrix (col. 6, lines 65-67). As seen in figure 10 the thermoplastic matrix with pieces of retroreflectors is disposed on a substrate and covered by a transparent top coat.

Stump discloses all the limitations of the instant claimed invention except which side the reflecting layer would be on when using a retroreflective cube corner sheeting.

Nilsen discloses a retroreflective article comprising retroreflecting cube corner prisms with a metal optical layer over the faces of the cube corners (see the figures).

It would have been obvious to one of ordinary skill in the art at the time of the invention to put the metal optical reflecting layer of Stump on the surfaces of the cube corner sheet as

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taught by Nilsen because it would increase the reflective properties of the reflective cube corner surfaces.

Although Stump does not explicitly teach the limitations the index of refraction is in the range of between about 1.1 and 1.3, it is reasonable to presume that said limitations are inherent to the invention. Support for said presumption is found in the use of similar materials (i.e. silver or aluminum) used to produce the retroreflective article. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594.

Stump does not disclose the exact length of the chips/pieces. The exact length of the pieces is deemed to be a cause effective variable with regard to the size of the extruder. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such length of the pieces through routine experimentation in the absence of a showing of criticality in the claimed length. *In re Boesch*, 205 USPQ 215 (CCPA 1980), *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). One of ordinary skill would have been motivated to change the length of the pieces to accommodate the extruder openings.

Stump discloses all the limitations of the instant invention except for the pattern wall thickness. The exact thickness of the wall is deemed to be a cause effective. It would have been obvious to one having ordinary skill in the art to have determined the optimum value of a cause effective variable such as thickness of the wall through routine experimentation in the absence of a showing of criticality in the claimed combined thickness. *In re Boesch*, 205 USPQ 215 (CCPA 1980), *In re Woodruff*, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). One of ordinary skill in the art would have been motivated to change the thickness of the wall depending upon the design they wish to impart in the sheeting.

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The term "breakable" is considered to be equivalent to "capable of." It has been held that the recitation that an element is "capable of" performing a function is not a positive limitation but only requires the ability to so perform.

6. The 35 U.S.C. §103 rejection of claims 6 and 49 over Stump et al. (5,835,271) in view of Nilsen et al. (5,657,162) and further in view of Corderre (5,272,562) is repeated for reasons previously of record in paper #16, page 7, paragraph #12.

The combination of Stump and Nilsen discloses the claims invention except for the substantially rigid polymer material further including a filler.

Coderre discloses a cube-corner retroreflective material comprising pigments in a polymer. The pigments may comprise zinc oxide, zinc sulfide, lithopone, titanium dioxide, etc. See col. 5, lines 11-45.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add pigments to the cube-corner material of Stump as taught by Coderre because it would add a decorative color to the article of Stump.

7. The 35 U.S.C. §103 rejection of claims 13 and 46 over Stump et al. (5,835,271) in view of Nilsen et al. (5,657,162) and further in view of Heenan (4,208,090) is repeated for reasons previously of record in paper #16, pages 7-8, paragraph #13.

The combination of Stump and Nilsen discloses the claims invention except for the sheeting further comprising a color coating on at least some of the open faced cube-corner surfaces.

Heenan discloses a reflector structure comprising a reflector body, reflector elements coated with a thin layer of metal, an adhesive coating and a backing member (figure 6B). The

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reflector element has a cube corner axis about which three reflecting surfaces are symmetrically arranged (col. 4, lines 32-35). The thin metal layer can be aluminum (col. 7, lines 60-62). The reflector body may be formed of clear synthetic organic plastic resin, whereby a white beam of light is reflected thereby both in daylight and at night. However, a color such as red, yellow, blue and the like may be incorporated in the body, thereby to give a colored signal both in daylight and at night. Alternatively, the reflecting surfaces of the body may be colored, thereby to give colored reflections there from. See column 7, lines 3-11.

It would have been obvious to one of ordinary skill in the art at the time of the invention to add a color layer to the open faced structure of Stump and Nilsen as taught by Heenan because it would add a decorative effect or a color contrast to help catch people's attentions.

ANSWERS TO APPLICANT'S ARGUMENTS

8. Applicant's arguments filed in paper #18 regarding the 35 U.S.C. §102 rejection as anticipated by Nilsen et al. (5,657,162) of record have been carefully considered but are deemed unpersuasive.

Applicant argues that the retroreflective prisms disclosed in Nilsen are traditional cube-corner prisms and not "open-faced" cube-corner prisms. Specifically, Applicant argues that the incoming light rays R pass through the material that forms the cube-corner prisms. Thus, the prisms must be formed from a material that is substantially transparent to allow the light rays to pass there through.

Applicant points to the specification on page 6, line 29 through page 7, line 6 to give the guidelines for the "open-faced" cube-corner surfaces. The specification on page 6, line 29 to

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page 7, line 6 recites “***Preferably***, surfaces 18 comprise opened-faced “cub-corner” surfaces, which are three-surfaces disposed at substantially 90 degrees to one another, similar to traditional cube-corner prisms. The nadir of the surfaces 18 are spaced ***preferably*** with a pitch in the range of between about 25.4 and 508 μm (0.001 and 0.020 inches). ***Preferably***, the incoming light ray R internally reflects off of the three surfaces such that the outgoing light R is substantially parallel to the incoming light ray R, regardless of the entrance angle.”

The guides lines which Applicant points to in the specification are not a definition for the term “open-faced” cube-corner surfaces, but merely the ***preferred*** embodiment for Applicant’s “open-faced” cube-corner surfaces. Since, these limitations on which Applicant relies (i.e. the preferred embodiment from the specification on page 6, line 29 through page 7, line 6) are not stated in the claims. It is the claims that define the claimed invention, and it is claims, not specifications that are anticipated or unpatentable. Furthermore, the specification even states that Applicant’s cube-corner prisms are similar to traditional cube-corner prisms. Applicant must specifically point out how the language of the claims patentably distinguishes them from the prior art of record.

Applicant also points to the specification on page 9, lines 19-25 to point out the primary advantage of the open-faced sheeting. The fact that Applicant has identified further properties gained by the product does not alter the conclusion that a prior art product would be *prima facie* obvious from the properties disclosed in the reference since the prior art teaches the claimed structure and materials. Attorney argument is not evidence unless it is an admission, in which case, an examiner may use the admission in making a rejection. See MPEP § 2129 and § 2144.03 for a discussion of admissions as prior art. The arguments of counsel cannot take the

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place of evidence in the record. *In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) (“An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a prima facie case of obviousness.”). See MPEP § 716.01(c) for examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration. See MPEP § 2145.

It is noted that the specification on page 9, lines 22-23 recites that the sheeting can be made “without the requirement that the material be transparent as in the traditional construction.” Therefore, even though the sheeting material does not have to be transparent, it does not explicitly teach that it cannot be made of transparent material or even that a non-transparent material is preferred.

9. Applicant’s arguments filed in paper #18 regarding the 35 U.S.C. §102 rejection as anticipated by Fellows et al. (6,050,691) of record have been carefully considered but are deemed unpersuasive.

Applicant argues that Fellows teaches traditional cube-corner prisms and not “open-faced” as described in the arguments regarding the Nilsen reference. Applicant’s arguments regarding the term “open-faced” cub corner prisms have already been addressed above.

10. Applicant’s arguments filed in paper #18 regarding the 35 U.S.C. §102 rejection as anticipated by Jones (5,182,663) of record have been carefully considered but are deemed moot since the rejection has been withdrawn.

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11. Applicant's arguments filed in paper #18 regarding the 35 U.S.C. §102/103 rejection as anticipated by or over Nilsen et al. (5,657,162) of record have been carefully considered but are deemed unpersuasive.

Applicant argues that Nilsen teaches traditional cube-corner prisms and not "open-faced". Applicant's arguments regarding the term "open-faced" cub corner prisms have already been addressed above.

12. Applicant's arguments filed in paper #18 regarding the 35 U.S.C. §103 rejections of record have been carefully considered but are deemed unpersuasive.

Applicant argues that all the references Stump, Nilsen, Corderre and Heenan disclose traditional cube-corner prisms and not "open-faced". Applicant's arguments regarding the term "open-faced" cub corner prisms have already been addressed above.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia Chevalier whose telephone number is (703) 305-1139. The Examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:00 p.m. The Examiner can also be reached on alternate Fridays


If attempts to reach the Examiner are unsuccessful, the Examiner's supervisor, Harold Pyon can be reached by dialing (703) 308-4251. The fax phone number for the organization official non-final papers is (703) 872-9310. The fax number for after final papers is (703) 872-9311.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose phone number is (703) 308-0661.

ac

4/25/03




HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772 4/30/03